



Serial No.: 09/595,765

APPENDIX A

Changes to the Specification

The paragraph at page 6, line 4 has been revised as follows:

The separation between the substrate and reflector may be approximately 0.3 of an inch (7.6 mm), thus forming a cavity which has a width-to-height ratio of about 27. In processing systems that are designed for eight-inch silicon wafers, the distance between the substrate 106 and the reflector 102 is about 3 mm and 9 mm. The width-to-height ratio of the cavity 118 should be larger than about 20:1. If the separation is made too large, the emissivity-enhancement effect that is attributable to the virtual blackbody cavity that is formed will decrease. On the other hand, if the separation is too small, for example less than about 3mm, then the thermal conduction from the substrate to the cooled reflector will increase, thereby imposing an unacceptably large thermal load on the heated substrate, since the main mechanism for heat loss to the reflecting plate will be conduction through the gas. The thermal loading will, of course, depend [up] upon the type of process gas and the chamber pressure during processing.

Replace the paragraph at page 6, line 21, with the following text:

The [temperature] temperatures at localized regions of the substrate 106 are measured by a plurality of temperature probes 152. Each temperature probe includes a sapphire light pipe 126 that passes through a conduit 124 that extends from the backside of the base 116 through the top of the reflector 102. The sapphire light pipe 126 is about 0.125 inch in diameter and the conduit 124 is slightly larger. The sapphire light pipe 126 is positioned within the conduit 124 so that its uppermost end is flush with or slightly below the upper surface of the reflector 102. The other end of light pipe 126 couples to a flexible optical fiber that transmits sampled light from the reflecting cavity to a pyrometer 128.

The paragraph at page 9, line 13 has been revised as follows:

During processing, a process gas can be introduced into the space between the substrate and the window assembly through an inlet port. Gases are exhausted through an exhaust port, [and] which is coupled to a vacuum pump (not shown).

The paragraph at page 9, line 24 has been revised as follows:

A plurality of circular coolant passages 206 are also formed into the monolithic lamphead, in close proximity to the reflector cavities. The coolant passages transport a cooling fluid such as water. The [coiling] cooling fluid is introduced into the coolant passages via an inlet 150 and removed at an outlet 152.